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INVESTIGATIONS

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CULTURE OF HARD CLAMS

The hard clam (Venus mercenaria) is found from Maine to Florida, being most abundant along the shores of Massachusetts, Rhode Island, New York, New Jersey, and Virginia. Clam fisheries of considerable extent exist also in North Carolina and Florida. In the New England States these clams are called "quahaugs" or "quohogs," while in New York and in the South they are known as "hard clams," "hard-shelled clams," "round clams" or "little necks". They live in the zone extending from almost high-tide level to a depth of over 50 feet, being most common on flats located several feet below the low water-line.

In hard clams the adults are, with few exceptions, of separate sexes, and males and females are represented in virtually equal numbers. Almost all young clams first develop as males, but later, usually during the second year of life, approximately half of their number becomes female. Some young animals may spawn at the age of 3 or 4 months, but the majority spawn when 1 year old. Hard clams begin spawning in the summer when the water temperature reaches about 73°F. In southern waters this happens earlier, and the spawning season is of longer duration than in northern States.

The rate of growth of the clam is considerably affected by the types of current, depth, salinity, and temperature of water, and composition of bottom soil. A good current of water is needed to provide clams with food and oxygen, and keep the beds clean. Hard clams can feed only when covered with water. Clams living near a high-tide level are exposed daily for long periods, during which time they do not feed. Retardation in growth, due to loss of feeding time, is the usual result. The natural clam beds are found in brackish water the salinity of which ranges from about 10 to 28 parts per thousand. Clams are well adapted to tolerate daily fluctuations in salinity which usually occur in the water covering the beds located near river mouths, or in bays and harbors.

Like many other mollusks of the same group, hard clams grow more rapidly in warmer regions than in the North where the water temperature drops almost to the freezing point during the winter months. In northern waters the animal grows only from May to the middle of November. The fastest growth is achieved during the second part of July, in August, and in September. The rate of growth varies in different localities.

The cultivation of hard-shell clams may be rendered a very profitable and dependable business, provided some fundamental rules are observed in selecting the ground for the farm and in taking proper care of it. It has been estimated that a hard clam farm can yield as much as 600 bushels of 2-1/2-inch clams per acre annually. In choosing the location for the farm the planter should select one where good circulation of water persists, and where the nature of the bottom soil is such that it will support the

clams. A farm located between the tidal lines or close to the low water mark is an uncertain investment as there is always danger of the destruction of clams during a severe winter. It is preferred, therefore, to plant clams on flats which are covered with at least 3 feet of water at low tide. The farm should be located away from all sources of industrial or domestic pollution. Well protected areas are preferable to open water because, in the latter case, the wind and rough water may result in loss of stock and will considerably increase the amount of labor involved. If possible, the farm should be located near regions where seed clams may be readily obtained.

Although the set of hard clams is usually less abundant than that of soft ones, it may be gathered and transported in large quantities from the natural clam beds. The planter can also catch a considerable number of seed clams on his own grounds by simulating the natural conditions of the areas where the setting of clams usually occurs.

Little work is needed to prepare the ground for planting. It consists of the removal of thick grass, stones, and other debris which would interfere with the raking of clams, and of the destruction of the enemies, such as cockles, conches, and starfish. The young clams may be scattered evenly from a boat by shovels. Usually young clams will burrow in the sand a short time after they have settled to the bottom. As clams are not active at low temperature, it is not advisable to plant them in cold weather when, instead of burrowing, they will lie on the surface exposed to attack by their enemies. The number of seed clams that can be planted on any given area will depend upon the natural conditions, chiefly the current. When circulation of the water is good, as many as 25 seed clams can be planted per square foot of the bottom. Little labor will be required to take care of the farm after the seed clams are planted. If left undisturbed, they will grow until they attain a marketable size. At times, however, it may be necessary to clean the grounds of seaweeds and destroy the enemies.

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